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A6D

A6S

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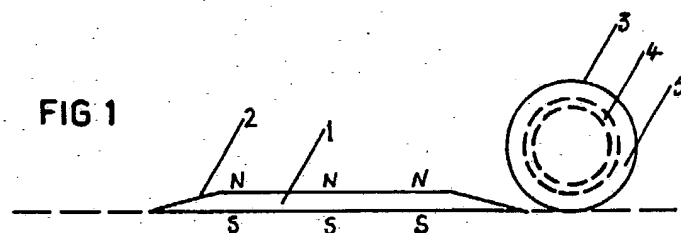
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## (54) Magnetic ball and target

(57) In a game in which a ball 3 is rolled towards a target 1 at least one of the ball and target is permanently magnetised so that when the ball is caused to roll near to the target it is attracted to locate thereonto. As described a magnetic golf ball (3) comprises an hollow sphere (4) of magnetically susceptible material and a covering (5) of rubber or similar elastic material.

The target disc (Fig. 3 not shown) which magnetically simulates a golf hole comprises a circular disc permanent magnet magnetised across its faces, mounted concentrically upon a disc made of permeable magnetic material.

The disc concentrates the magnetic field of the magnet at its periphery so that a ball (3) a little way from the edge of the disc experiences very little attractive force, but a ball (3) very close to the disc edge, is pulled firmly on to it.



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FIG 1

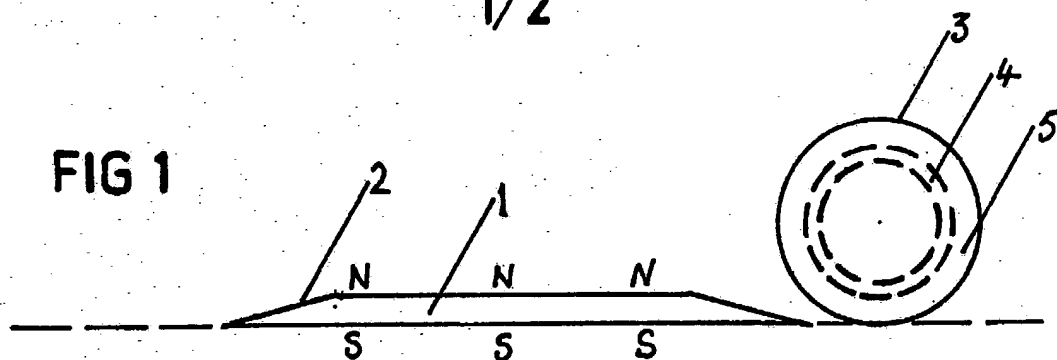


FIG 2

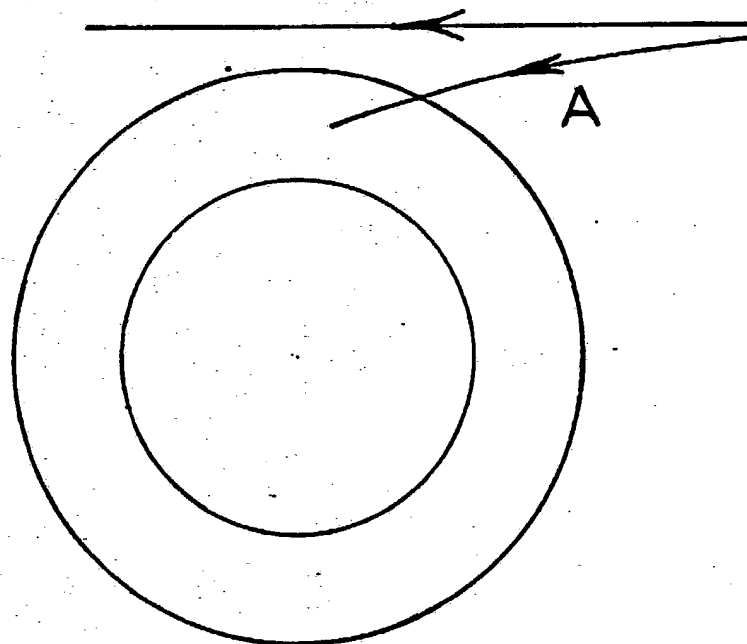
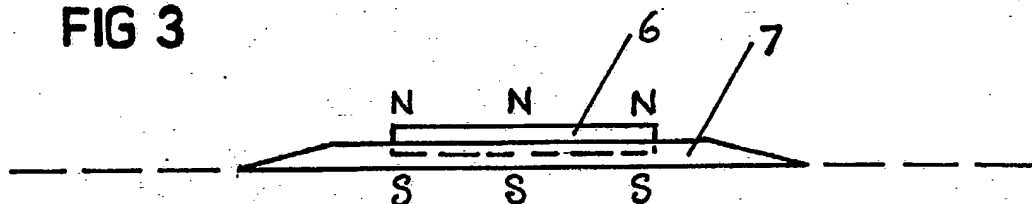


FIG 3



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FIG 4

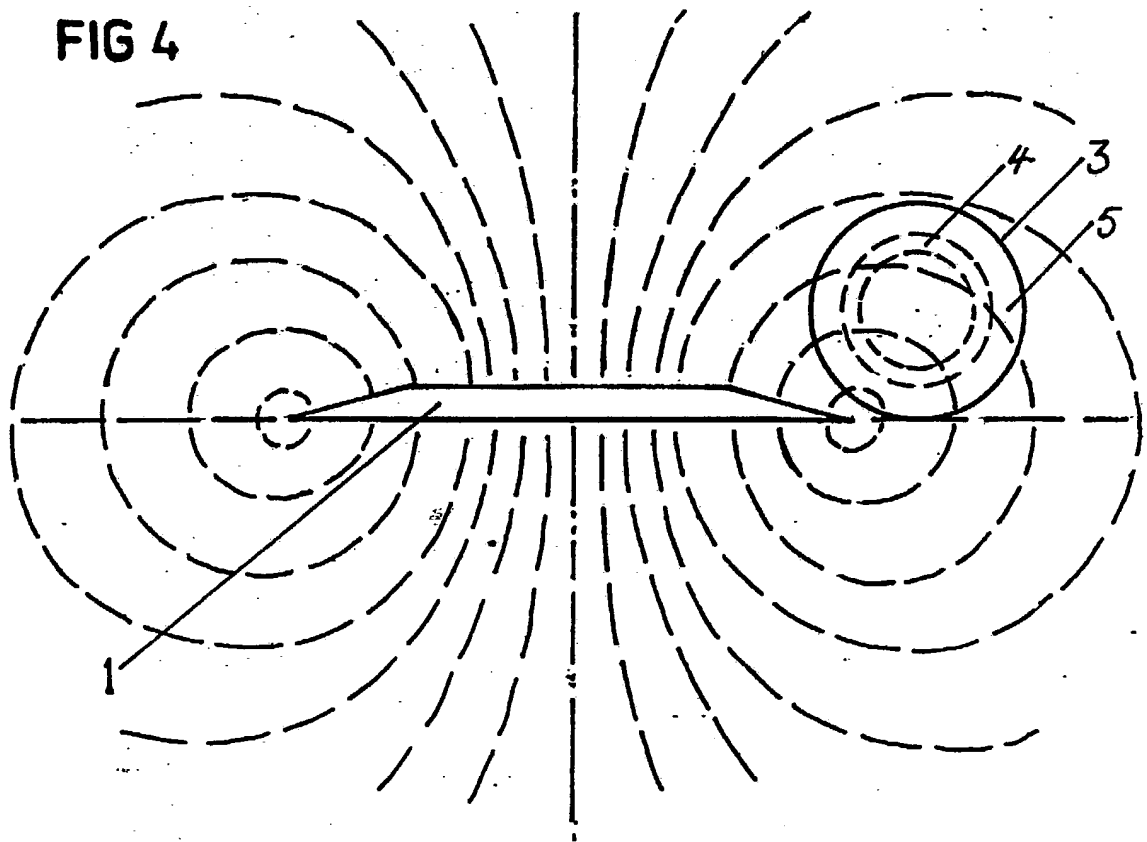
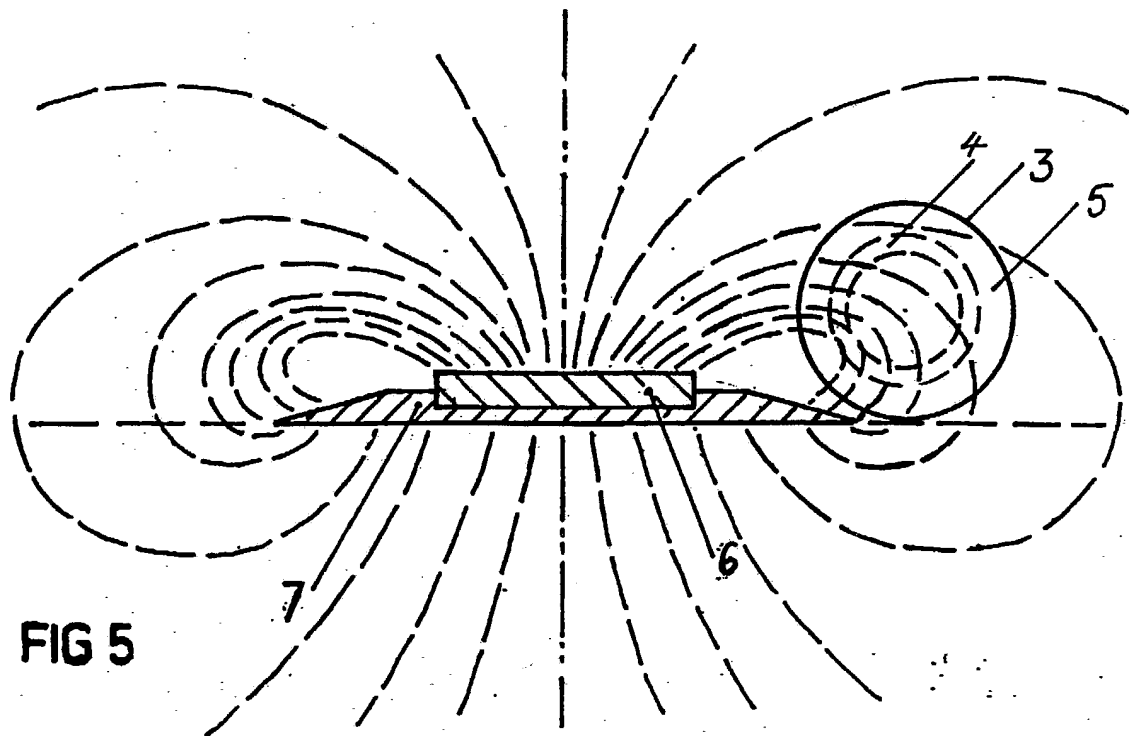


FIG 5



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MAGNETIC BALL AND TARGET

This invention is concerned with equipment for the playing of golf or like games in the home or garden, without the need for any holes.

It is quite common for golfers to want to practice putting or short range golf shots at home. For example, putting can be practiced by aiming at part of the pattern on the carpet, or at a marker placed on the carpet or lawn.

The measure of achievement and the satisfaction from sinking a putt comes from the player making a judgement concerning the force and direction required in the hitting of the ball, carrying out this judgement and seeing the ball going positively into the hole. Putting a ball near to a mark is not such a positive achievement.

It is not convenient, or desirable, to cut holes in the carpet or the lawn.

Other practice putting devices are available but do not come near to simulating the action and conditions of normal golf putting.

According to the present invention there is provided a ball and a target, each comprising or containing magnetic material, at least one of which has its whole, or a part of it, permanently magnetised, so that when the ball is rolled into close proximity to the target it is attracted to locate onto the target.

Two examples of devices are now shown to illustrate the functioning in accordance with the present invention with reference to the following drawings:

Fig. 1 - Is an elevation of a plain magnetic disc and a ball.

Fig. 2 - Is a plan view of a plain magnetic disc.

Fig. 3 - Is an elevation of a permanent magnet set on a permable disc.

Fig. 4 - Shows the magnetic field of the plain magnet.

Fig. 5 - Shows the magnetic field of the magnet set upon a disc.

In Fig. 1 the magnet (1) is permanently magnetised across its faces and has a chamfer (2) to assist the ball to roll onto the magnet, and has a diameter similar to that of a standard golf hole. The ball (3), also shown in Fig. 1 has approximately the same size, weight and elasticity of a standard golf ball. The ball comprises a core (4) of magnetically susceptible material, for example soft steel, and a covering of rubber or similar elastic material (5).

The magnetic field of this disc magnet is shown in Fig. 4. The strength of the magnetic field is demonstrated by the spacing of the lines of force. In Fig. 4 it can be seen that the strength of the field diminishes gradually as the distance from the edge of the magnet increases.

With a standard golf ball and hole, the hole has no influence on the ball until half of the ball has rolled over the edge. Then, subject to the speed and line of travel of the ball, it drops abruptly into the hole.

In the example above the magnetic simulation of the gravitational system applying to normal ball and hole putting is only approximate. The magnetic field has some influence on the ball as it approaches, or passes closely by the disc. One effect is shown at A in Fig. 2.

A further effect is when a ball has been struck too lightly and would normally stop short of the hole, but can be drawn onto the disc by the magnetic field.

This simple arrangement is quite satisfactory for a childrens' or domestic game, but a more accurate magnetic simulation of the normal golf putting conditions is required for a golfer wishing to carry out some serious putting practice.

The construction shown in Fig. 3 overcomes those problems. Fig. 3 shows a circular disc permanent magnet (6), magnetised across its face, set concentrically on a disc (7) made of permeable magnetic material, and having a diameter similar to that of a normal golfhole. The permeable material of disc (7) pulls in and concentrates the lines of force in the vicinity of the edge of the disc, as shown in Fig. 5. The outlines of the ball when in close proximity to the edge of the disc are shown in Figs. 4 and 5 to demonstrate the change in the strength of field applying to the ball.

From the tighter packing of the lines at the edge of the disc in Fig. 5 as compared with Fig. 4, it can be seen that the force on the ball increases much more rapidly and to a higher level than in the previous example. Farther away from the disc the force diminishes more rapidly.

Therefore the influence of the magnetic field is insignificant until the ball reaches the close proximity of the edge of the disc, when the force pulling the ball onto the disc increases rapidly. This arrangement is therefore a much closer simulation of normal putting conditions.

There are several other viable configurations within the principles of the invention. The following are some examples :-

- (a) An horizontal magnetic disc supported above the ground by a base and slender column at a height somewhat greater than the diameter of the ball so that when the ball rolls under the disc it is lifted upwards onto the disc.
- (b) A disc on the floor supporting a slender vertical columnar bar magnet having a magnetic pole at each end.
- (c) A ball made substantially of elastic material but housing one or more magnets which could work with any of the targets described but would be particularly suitable to work with the columnar bar magnet in (b) above.
- (d) A ball being moulded from a mixture of elastic material and a magnetic particulate material.

CLAIMSClaim 1

A ball and a stationary target, each comprising or containing magnetic material, at least one of which has its whole or a part of it permanently magnetised so that when the ball is caused to roll into close proximity to the target, it is attracted to locate onto the target.

Claim 2

A ball and target as in Claim 1 where the target is a disc lying on the floor and having a diameter approximately equal to that of a golf hole.

Claim 3

A ball and target as in Claim 1 where the disc is supported horizontally above the ground at a height greater than the diameter of the ball.

Claim 4

A ball and target as in Claim 1 where the target comprises a thin base supporting a vertical slender columnar permanent magnet having a magnetic pole at each end.

Claim 5

A ball and target as in Claims 2 or 3 where the disc is made wholly of magnetic material and is permanently magnetised.

Claim 6

A ball and target as in Claims 2, 3 or 5 where the disc is hollow to form a ring or annulus.

Claim 7

A ball and target as in Claims 2, 3, 5 or 6 where the disc is made of permeable magnetic material but is not magnetised, having one or more permanent magnets mounted upon it.

Claim 8

A ball and target as in Claims 1 to 7 where the ball consists of a central solid or hollow sphere of magnetically susceptible material with a covering of rubber or other similar elastic material.

Claim 9

A ball and target as in Claims 1 to 7 where the ball contains one or more permanent magnets.

Claim 10

A ball and target as in Claims 1 to 7 where the ball contains magnetic particulate material mixed with the rubber or other elastic material.

Claim 11

A ball and target substantially as described herein and with reference to Figs. 1 to 5 of the accompanying drawings.

Amendments to the claims have been filed as follows

Claim 1

A ball containing magnetic material, a target disc containing permeable magnetic material with one or more permanent magnets mounted upon it, so that the magnetic field is concentrated at the periphery of the disc, causing the force attracting the ball to the disc to be insignificant until the ball rolls into close proximity of the disc, whereupon the force increases sharply attracting the ball to locate onto the disc thus simulating the action of a ball dropping into an hole.

Claim 2

A ball and target disc as in Claim 1 where the disc is supported above the ground or playing surface at any height greater than the diameter of the ball.

Claim 3

A ball and target disc as in claims 1 and 2 where the disc has a central hole to form a ring or annulus.

Claim 4

A ball and target disc as in Claims 1 to 3 where the ball consists of an hollow sphere of magnetic material with a covering of rubber or like elastic material.

Claim 5

A ball and target disc as in Claims 1 to 4 where the ball contains one or more permanent magnets.

Claim 6

A ball and target disc as in Claims 1 to 3 where the ball contains magnetic particulate material mixed with rubber or other like elastic material.

Claim 7

A ball and target disc substantially as described herein and with reference to 1 to 5 of the accompanying drawings.